AMERICAN VETERINARY REVIEW,

NOVEMBER, 1881.

ORIGINAL ARTICLES.

THE HORSE'S FOOT.

By A. Zundel.

(*Continued from page 274.*)

Corns—(*Continued*).

IV. *Pathological Anatomy.*—The lesions vary according to the severity of the disease. In *dry corn*, we find an infiltration of blood in the horny structure. This is blood which has transudated through the laminated or irritated velvety tissue from the injured blood vessels. This blood gives to the hoof various tints, more or less pronounced, not unfrequently yellowish, according to the intensity and duration of the disease. The hoof sometimes loses consistency and becomes brittle; at others it is hard and dry, and then resembles healthy hoof minus its coloration. If the ecchymotic spot involves the whole thickness of the horn, from its surface to its depth, it is an evidence of the continued activity of the cause. A deep mark indicates a recent injury; a superficial one is an evidence of an older corn, which disappears, and then it seldom produces lameness. Sometimes the marks are arranged in layers, the healthy horn being alternated with others

which are infiltrated with blood. This is a proof of the intermittent character of the acting cause which has originally produced the corn. The ecchymosis, however, is not the actual seat of the corn, which is more in the velvety and especially in the laminated tissues, which are torn or bruised, the blood escaping through the sole simply by the action of the laws of gravitation. It is rarely that this lesion is looked for in case of dry corn, and it is usually ignored; but, in the confirmed corns, a true alteration of the laminæ of the keraphyllous tissue is observed. This is replaced by a horny tumor, a kind of keraphyllocele, analogous to that of chronic laminitis, due to a union of the laminæ under the influence of the fibro-plastic exudation resulting from the inflammation, which is of varying size, and presses more or less on the sub-horny tissues. In some cases, this horn breaks up little by little, and gives rise to quarter crack. The ecchymotic spots of dry corn may vary in size; they may range from the size of a pea to that of a ten-cent coin. At other times they may occupy the entire space between the bars and the walls of the foot.

In *moist corn*, there is not only hemorrhage, but also inflammation proper, with serous exudation. The hoof is colored, as in dry corn, of a brownish tint, due to the infiltration of blood which occurred at the start; on searching deeper, one will discover between the hoof and the living tissues beneath a separation of varying dimensions, filled by citrine serosity. Most frequently, this separation takes place at the line of union of the sole with the wall, and extends under both. The horny substance is then more or less impregnated with this serosity, and then has a characteristic yellow appearance and a waxy consistency.

In *suppurative corns*, or more properly, suppurating, the inflammation ends in suppuration. The pus is secreted by the velvety and laminated tissues. It makes room for itself by gradually separating the hoof as its formation progresses. Before long it passes between the podophyllous grooves of the bars and of the quarters, the horny are loosened from the fleshy laminæ, and in its ascending progress the pus soon makes its appearance between hairs and hoof at the quarter, at the heels, or at the glomes of the frog. It is not common for the pus to make its way through

a hoof of too thick or resisting a nature, unless it has first been sufficiently softened by poultices and thinned down by the knife. This suppuration, in the generality of cases, brings on serious complications, by the excessive pressure to which the sub-horny tissues are then subjected. Gangrene of the velvety tissue near the branches of the sole and of the podophyllous grooves which have been macerated in the suppuration, are very common complications. If the pus remains long in the hoof, its gangrenous results may extend to the os pedis, the lateral cartilage, the plantar cushion, and even to the plantar aponeurosis, and give rise to necrosis or caries of the bones, or to quittor, to a more or less variable extent. This sub-horny suppuration, which may sometimes be considerable, as well as the complications accompanying it, are detected with the probe.

V. *Termination and Prognosis.*—Resolution is a common termination of corns. But their relapse is common also, especially in feet predisposed to them by bad conformation. A kind of chronic condition of the disease, and one which is more liable to become serious than the accidental variety, is the ordinary termination in this case. The mere extent of the disease is of less importance in the diagnosis than the predisposing conditions. Generally, the dry corn is less serious than the moist one, and especially less than the suppurative. Complicated corns, principally in flat, wide feet, with low heels, by reason of uncertain, protracted and expensive treatment, are in general fatal, and necessitate the destruction of the patient.

VI. *Treatment.*—The largeness of the space we have consumed in considering the etiology of corns will compel us to be brief in our remarks upon the *preventive treatment.* Shoeing, which is so often the cause of corns, may also be made a means of preventing them, even upon predisposed feet, if performed with intelligence and proper observation, based upon the anatomy and physiology of the foot. Generally speaking, one must not proceed rashly by changing too suddenly the mode of shoeing. We do not think that any one specified system of shoeing will with certainty prevent corns, but we do believe that each case demands its special study and care. Usually, a flat shoe, and

which has the heels rather thin but resisting, and which rests on the wall proper, even of the diseased one, if not too painful, is to be preferred. If the shoe is for a low-heeled foot, the heels of the shoe should be thicker in order to supply their insufficient height and to offer more resistance to the weight of the body. Sometimes the protecting effect of the shoe must be completed by the use of a plate of gutta percha or leather between the foot and the shoe; India rubber does not answer, as by its elasticity it interferes with the resistance of the shoe. It is absolutely necessary to preserve the hoof in a sufficiently supple condition, to effect which tar, hoof ointments, and other greasy substances are used. Flaxseed meal, poultices of cow manure and salt water, a damp bedding, tallow in the hollows of the heels, all are very good preventives and even curative means, which a careful hostler will not neglect. Paring the feet thin, as practiced by some, is very objectionable, and is a serious obstacle to the extirpation of corns. The feet should be pared as little as possible, especially at the heels or in the lacunæ.

As for the *curative treatment*, there are, according to H. Bouley, four indications to follow: First, remove the acting cause; second, treat the injury it has produced; third, relieve the pressure upon the diseased region, until it has returned to its healthy condition; fourth, prevent the return of the injury.

The first indication is easy to fulfil with the accidental corn, but often nearly impossible in that due to a bad conformation of the feet. The second indication varies according to the extent of the disease. Generally it is advised to thin down the hoof at the bruised part and its surroundings, so as to relieve the pressure on congested or inflamed parts. Still, we are not in favor of too much thinning of the hoof, and except under peculiar conditions, would practice it very slightly. Even in the moist corn, we believe in leaving to the hoof a certain protective thickness. The pressure can be sensibly diminished by the application of chloroformed-oil, or of tincture of creasote; they very readily penetrate the hoof, and act directly upon the inflamed parts. We believe that excessive paring, the "cutting out of the corns," to use the shoer's expression, is injurious, and predisposes to new

corns, by weakening the region and promoting a more rapid desiccation and contraction of the hoof. In all cases of dry and moist corn, one must avoid making the parts bleed, the exposure of the soft tissues, and all unnecessary cutting. Thinning is necessary in suppurative corn; and has to be done over the whole extent of the separation of the horn, and a wide channel of exit made for the pus on the side of the sole. It is a wise plan not to remove the entire mass of the loosened hoof, as by this the dressing will be much facilitated.

Cold baths are useful in all cases of corns; at other times poultices of bran or other material are preferred. Sometimes sulphate of iron or of copper are added to the bath, especially in the moist corn. In the suppurative kind, when the suppuration is irregular, and when complications are likely to follow, warm and slightly aromatic baths are better, and after this, a dressing with tincture of creosote, renewed the same day or the next. Later, cold iron or copper baths may be used again; if the suppuration has broken out between hairs and hoofs, injections of Villates' solution, after free escape of the pus by the plantar surface, are indicated.

In the complicated suppurative corn these means are insufficient. We must cut deeper, and for this the animal must be thrown. Then, when the diseased tissues are exposed by the removal of the loosened hoof, the nature of the lesions must indicate the requirements of the treatment. The velvety and podophyllous tissues, if gangrenous, must be excised as far as their diseased condition extends; carious bone is to be scraped; the fibrous and fibro-cartilaginous structures, if necrosed, are to be excised or cauterized, or sometimes left alone and watched, according to the peculiar character and extent of their lesions and the extent to which they exist. Once operated on, a dressing with plates and bands is applied, and the animal allowed to rise.

It is by a peculiar shoeing that, for some time, the painful heel must be relieved from supporting its part of the weight of the body, and protected from outside pressure. This is the "bar shoe." By the transverse bar, which unites both branches, it presents a support to the frog and protects the heels. The rest-

ing of the shoe takes place equally upon the wall of the toe and of the quarters, especially the external, and it does not rest on the diseased heels which may have been first cut away. Some veterinarians prefer the truncated, or the oblique bar shoe, or that with a bar forming an acute reentering angle; Hartmann recommends the first; Mayer prefers the bar shoe in which the bar or heels have been thinned down, and even hollowed, to avoid as much as possible the pressure on the diseased part; this shoe has sometimes given us good results in horses with a weak frog. In many cases, ordinary shoeing answers; then the diseased hoof is pared down. The branch of the shoe in this case requires a greater thickness. Whatever may be the mode of shoeing used, much advantage can be obtained by the application of a sole of leather or of gutta percha.

(*To be continued.*)

EPIZOOTIC CELLULITIS, OR PINKEYE, AT CINCINNATI.

By J. C. MYERS, JR., M.D., V.S.

A brief account of the epizootic cellulitis, or what is commonly termed pinkeye, as it attacked horses and mules at Cincinnati may not be out of place if the communication reaches you before the disease itself has infested the east.

After having made its appearance at St. Louis and Chicago it arrived at Cincinnati about the 20th of September, beginning at the western portion of the city, which lies on the Mill Creek Valley, a lowly situated effluvial district. The outbreak was not general in its attack. It hovered over the western locality about three weeks before it picked upon stables in the central and eastern districts of the city. The proportion of horses and mules attacked by the malady varied greatly in the different stables, regardless of their immediate surroundings and hygienic conditions. Some stables had their entire stock invaded, others between 90 and 33 per cent. or less, but in the majority of instances 75 per cent. were attacked to a greater or lesser extent.

It required from five to fifteen days before the disease picked upon all the victims that were doomed to become afflicted in any one stable. By this behavior of the epizootic the horse owners were able to pursue their business without serious interference. The violence of the seizures upon the different equines varied greatly. Some would appear a little indisposed for a few days, while others, especially old ones, would present all the symptoms appertaining to the disease in the most virulent form.

Symptomatology.—Languidness, impaired appetite and pendent head are the first appreciable symptoms, usually followed by a watery discharge from the eyes, which later, changes to a thick mucus. The eyelids puffy, in some cases everted and half closed. The cornea appears lusterless and conjunctiva hyperæmia. In a very small proportion of cases a discharge from the nostrils is perceived. The extremities are swollen, tender and hot. The swelling may extend clear up to the trunk, involving the sheath and vicinity of the linea alba.

A want of proper co-ordination partly due to an asthenic condition and in part to the inflamed limbs is a constant symptom of an aggravated case. Cough is seldom uttered. Impaired deglutition and glandular enlargement about the throat are wanting, neither does a redness of the schneiderian membrane exist. The fæces may be either tough or soft, mixed with mucous, or in some cases diarrhœa is present. The urine during the febrile stage is high colored and scanty, but later, the discharge becomes copious, with a lighter specific gravity.

The pulse ranges from 50 to 80 per minute during the first three days of sickness. The clinical thermometer may indicate a rise in the temperature from 1 to 6 degrees during the first stage, but on or after the third day both pulse and temperature drop suddenly to almost the normal standard, when the most attention is directed to the swollen limbs or affected eyes, as the case may be. Respiration at the outset is invariably increased, but without any abnormal murmurs to be heard on auscultation of the lungs if there is no pulmonary disease in connection, which fortunately is exceedingly rare. Purpura hemorrhagica has not to my knowledge made its appearance as a complication or sequel of

pinkeye as yet. Although the limbs of exaggerated cases are swollen to a marked extent, no bloody extravasations are visible. Laminitis is the only complication of any importance that has come under my observation, and this only in four cases which, under proper treatment, rallied very soon.

The course of the disease ranged from 3 to 10 days, "barring complications." The prognosis is good.

The insidious manner with which this disease progresses is far more desirable to both horse owners and practitioners than the rash and universal invasion of the former epizootic "influenza," as it does not render the entire equine species unfit for service at one time. It creeps along so slowly that the first half of the infected animals are convalescent before the last half are taken sick, and in this way avoids any serious delay in business circles. Moreover, the veterinarian has a better opportunitiy to devote his attention to the fewer patients he in this way has, than to the multitude he would otherwise have if the whole city was stricken with the epizootic cellulitis or pinkeye at one time.

EPIZOOTIC INFLUENZA IN THE WEST.

By A. A. Holcombe, D.V.S.

Less than a month ago the daily papers of Missouri and Iowa announced the prevalence of "a new disease" among the horses of the cities and principal towns of those two States. It was said that no one knew the exact nature of the strange malady, which was described as being sudden in its attack, causing great weakness accompanied by extensive swelling of the legs and seme discharge from the nose and eyes. Report said that nearly all the horses in an infected district became subjects of the disease, that many died, but that mules seemed exempt from the contagion.

When the outbreak in Kansas City, Mo., had become pretty general, I was ordered to investigate it, so as to determine what it was and the necessary precautions to be adopted to protect the public animals at this station. A visit to Kansas City was accordingly made, and a large number of sick animals seen. In some

stables nearly every animal was found affected, while in others, perhaps only next door, there would not be a single case. The outbreak is particularly characterized by great debility of the circulation, and as a consequence, marked œdema of the extremities results. There is almost an entire absence of laryngeal and thoracic complication, and in but few instances are there discharges from the nostrils. The temperature rarely goes beyond 105° F. The characteristics, suddenness of attack, extreme weakness, loss of appetite, etc., which belong to the disease, are of course present.

I presume that under such circumstances purpura haemorrhagica might be anticipated as a frequent sequel, but as yet I have seen only two cases.

Cases of the disease respond more quickly to treatment than has been customary in the former epizootics which I have witnessed. General stimulants combined with heart tonics are all the remedies that seem to be required, owing to the absence of varied local complications.

In the epizootic of last year, adenitis, laryngitis, bronchitis and pneumonia were quite common complications.

Unlike the former visitations of this disease, there are many stables as yet not affected, and it would seem from present indications, that they are likely to escape entirely. The weather is favorable, though, for its general prevalence. A majority of our days for the past two weeks have been cloudy, damp, often rainy, and the changes of temperature frequent and marked.

I have seen no fatal cases.

VESICAL CALCULUS IN A MARE.

By R. D. Eaton.

A brown mare, the property of Mr. Ira Vanguilder, was brought to my office suffering with great trouble of her urinary organs. On examination per vagina, I discovered in the bladder a large calculus which I thought was about the size of a goose egg. Doubting the possibility of successfully removing it, on

account of its size, I hesitated to operate on her; but the owner being willing to assume the risk, I proceeded as follows:

The animal being in a standing position, with one leg strapped up, I first drew the urine with the catheter, and having well oiled my hand, introduced it in the vaginal canal and applied fluid extract of belladonna upon the urethra. With the left hand I passed the lithotomy forceps into the bladder, and while there I gently guided the stone toward it. When firm hold upon the calculus had been obtained I withdrew the forceps with a rotary movement, and after a little while removed it. The bladder was washed with warm water and soap, and a drink of fluid extract barosma crenata and spirit. ether. nit. aa. ℥ ss., in a pint of warm water, administered.

The mare has done well ever since, and is hauling flour 18 miles every day.

EDITORIAL.

INFLUENZA.

Another outbreak of this disease has made its appearance, and reports come to us from many points of the country as to its existence and various modes of manifestation. In the west, where it started, a number of deaths are chronicled, and horse-car travel is affected. In the eastern States the disease is not in such a virulent form, nor are the cases so numerous; and, despite the efforts of a few whose improper reports and newspaper interviews have tended to frighten the public and owners of horses, the prospects are that it will prove far less troublesome than the epizootic of last year, and nothing in comparison with that of 1872.

Many and various opinions are expressed through the daily and agricultural press as to the cause, form and treatment of the disease. As to the first, we regret to say that any positive knowledge is not had at present, its etiology not being yet very well understood. The form most prevalent is the œdematous or, in some few instances, the rheumatoid.

The percentage of deaths is small, and no fears need be entertained of its assuming the serious proportions of similar past outbreaks.

Rest, hygienic treatment and supporting, nutritious diet have been the chiefly used indications.

Laminitis has been reported by some as a sequelæ of the disease, while in a few instances purpura-hemorrhagica has been the main complication.

ARMY VETERINARY MEDICINE.

We print in this number of the REVIEW the second part of the article on Army Veterinary Medicine, and will continue the last part in our December issue.

Written by one who sought entrance to the army for the purpose of determining by experience what the real difficulties surrounding the life of the army veterinarians are, we feel sure it will command the earnest attention of all who are interested in veterinary medicine, the advancement of the profession and the proper recognition of what is, or should be, a most important army officer—the veterinary surgeon.

To the Government we commend it for consideration in the belief that it will enlist her interference in behalf of her petitioners. It is not only degrading, but demoralizing, for the educated veterinarian to serve in the army under existing regulations. To place the veterinary surgeon below the *farrier*, the *chief-packer*, the *telegraph operator*, the *mechanic*, the *civilian's clerk*, and the *forage-master* or *train-master*, is an insult to any common intelligence or to the self-respect of any educated veterinary surgeon.

The duty devolving on the veterinarian is not only at times most arduous, but attended with grave dangers and by results of the utmost importance. The value of the services rendered by the employees who are better paid than the veterinary surgeon are insignificant when compared with the duties of the latter.

If the Government would have an Army Veterinary Department worthy of the name, and one that can render invaluable

service not only to the army but to the whole country, that department must be reorganized and the veterinary surgeon receive a proper recognition.

The first step in the right direction is to make the veterinarian a COMMISSIONED OFFICER.

FRACTURE OF ALL THE SESAMOID BONES.

It is not uncommon to meet a case where from apparently no cause at one, and sometimes at two legs, fracture of the sesamoid bones occurs, the fetlock dropping down by giving way of the superior sesamoid ligament, carrying with it fragments of the fractured bone.

An unusual case is published in the October number of the *Veterinary Journal*, where this lesion has taken place in the four legs. The history of the case is the same as the one obtained in similar injury, the symptoms showing themselves suddenly, without overwork, and the lesions being those always met in similar cases.

A full description will be found in this number of the REVIEW.

HOG CHOLERA IN NEW JERSEY.

From information received through one of our correspondents, Dr. J. Hopkins, this disease has found its way to the east from Ohio. In the first part of October Dr. H. was requested to examine into the cause of sickness and death among the swine on a farm in Monmouth Co. The Doctor found four dead and three sick, the autopsies confirming the diagnosis made. The owner of this herd had recently bought a number of pigs in New York city, but coming from Ohio. About a week after their arrival they began to sicken and die. Eleven of those from Ohio had died, and the last one was moribund at the time of the visit. The home herd was beginning to show the results of bad company, two being diseased.

Another party who had bought ten head from the same dealer, had already lost three and had more on the sick list.

ARMY VETERINARY MEDICINE.

ITS HISTORY; THE PRESENT CONDITION OF THE ARMY VETERINARY SURGEON; HIS RIGHTS AS A REPRESENTATIVE OF A SCIENTIFIC PROFESSION AND WHAT IS REQUIRED BY THE GOVERNMENT TO ESTABLISH AN EFFICIENT VETERINARY DEPARTMENT.

By A. A. Holcombe, D.V.S., Veterinary Inspector U. S. A.

(*Continued from page* 299.)

The Board has endeavored to keep the numbers and quantities of the articles in the above table down to the minimum required for the proper treatment of the diseases of the horse, and it feels convinced that a more limited supply table would not enable the veterinary surgeons to carry out the practice indicated by the most recent and advanced writers on the principles and practice of veterinary medicine and surgery.

In order to encourage thoroughness and system in the study and treatment of the diseases of the horse, as well as to furnish information regarding the management of the veterinary department of the army, a monthly report of sick and wounded for each company and battery, similar to that adopted by the Medical Department, should be forwarded by veterinary surgeons and company farriers, through the company and post commanders to the Quartermaster-General. While the number of instruments recommended is less than can be found at any ordinary veterinary hospital in civil life in this country, still they are believed to be sufficient. The first cost for an outfit for the army will be $25,000, which under ordinary use and wear should last for ten years. It is believed that a great saving in the purchase of this outfit could be made if it were done by an officer familiar with the use of veterinary instruments.

The panniers should, like those in use by the Medical Department, be so arranged as to contain only articles that are on the supply table. They should contain the articles of medicine in quantities allowed for one hundred horses in field service for three months, and a pocket case ball forceps, corkscrew, 6 oz. graduate glass, prescription scales, 2 spatulas, 16-ounce syringe, memorandum book, and two lead-pencils.

Believing that a properly-constructed and well-arranged pannier would be of great service for cavalry use, the Board will, if the supply table is approved, supervise the construction of a sample to guide the makers in getting them up. This can be done at the cavalry depot, with the skill and material at hand. The accompanying form for monthly veterinary reports is respectfully submitted.

(Signed) C. GROVER,
Col. 1st Cavalry, President.
EDW. P. VOLLUM,
Surgeon U. S. Army,
E. B. GRIMES,
Captain, A. Q. M. Recorder.

(The form of report submitted by the Board is added at the end of this order.)

"II. At the headquarters depots or larger posts of cavalry regiments, the standard supplies of instruments and medicines will be under the charge of the Quartermaster, to be issued by him to the smaller commands of the regiment in such quantities and of such articles as may be deemed requisite, conformably to the allowance fixed by the standard supply table."

"III. Hereafter appointments as veterinary surgeons will be confined to the graduates of established and reputable veterinary schools or colleges. They will be appointed by the Secretary of War in numbers not to exceed the legal establishment, and only on recommendation from the commanding officer of the regiment, supported by the requisite proofs of learning and skill, and by approval of intermediate commanders."

"IV. The visits of inspection and instruction by the veterinary surgeons will be made under the direction of the commanding Generals of Departments and Divisions."

The "Monthly Veterinary Report of sick and wounded," a blank form of which is annexed to the Order, simply required the number "Remaining under treatment from last month," "Total to be accounted for," "Returned to duty," "Transferred to another hospital or command," "Condemned to be sold or killed," "Lost, strayed or stolen while under treatment," and the specify-

ing which were horses, mules or oxen, the command to which they belonged, etc. But the "Directions" under the head of "Remarks," if properly complied with would supply very interesting and valuable information. They are as follows: "Here make any necessary explanations and communicate any matters of interest with regard to prevailing diseases or sanitary condition of the animals. Interesting cases and autopsies should be communicated in full, either in this place or in an accompanying letter. In case a hospital is opened or closed during the month, it should be stated by whose order and on what day. When the command is moving, the station on the first and last of the month and the rate should be given. When possible, name the breed and stock of animals most subject to diseases, and state the diseases to which they are most liable."

This, then, is the order which at the present time governs the appointment of veterinary surgeons to the various cavalry regiments of the U. S. army, regulates the supply of medicines, dressings and instruments for his use, and in part determines his duties. Before reference is made to the individual veterinary surgeons who served in the army prior to 1879, let us review the foregoing orders, and placing them beside contemporary events of importance which characterize the growth of veterinary medicine in the United States, see whether or not the Government has given the profession that recognition which it could, by reason of its position in the world of science, justly expect.

It is not surprising that the army contained no veterinary surgeons prior to 1861, when it is remembered that there were so few in the country and so little requirement for them in an army containing but two regiments of dragoons, two regiments of cavalry and one regiment of mounted riflemen, besides the horses and mules of the Quartermaster's Department. But early in 1861, a few weeks after the opening of the War of the Rebellion (May 4, 1861), when the first increase in the cavalry service was made, the Government recognized the importance of veterinary surgery by creating the office of Veterinary Sergeant. True, the position was not one that could tempt a veterinary surgeon to enlist in the service unless actuated by pure enthusiastic patriot-

ism, yet when viewed from the proper standpoint the Government's action was a worthy tribute to a profession as yet scarcely born to American soil.

Turning to Liautard's "History and Progress of Veterinary Medicine," published in the first issue of the AMERICAN VETERINARY REVIEW of 1877, we find that at this time the public could have known but little of our profession, for there were but few practitioners all told, and most of these were non-graduates, while as yet they had no representative organization. Only two States had recognized the profession—Massachusetts in 1855 by chartering the Boston Veterinary Institute, and New York in 1857 by chartering the New York College of Veterinary Surgeons. But at this date the first school had ceased to exist and the latter was not in working order, so that it can scarcely be said they had accomplished the acquaintance of the public.

To recognize then, even though in name only, that which had merely an existence at the time, must certainly be considered a flattering testimonial to the estimated value which the Government placed on veterinary medicine.

But the exigencies of war, particularly the terrible loss of horses and mules during the first two years, served to impress the Government with the importance of the service which veterinary surgeons might render, and so we find Congress taking the matter in hand, recognizing the Surgeon as distinct from the Sergeant and increasing his pay to $75 per month. Not satisfied with this improvement, the War Department a little later in the year determined to test the candidate's qualifications by an examination before a board of officers before making an army Veterinary Surgeon of him.

Possibly it may be objected that this improvement in the Veterinary Surgeon's position was not productive of the results which no doubt were desired, *i. e.*, the employment of *competent* Veterinary Surgeons, for it may with apparent reason be claimed that the compensation was not sufficient to secure their services.

While this view of the question is in part justifiable, a brief consideration of the circumstances will, I believe, conclusively prove that at that time no better terms could have been justly

offered, and that those offered were in reality comparatively liberal.

During these two years of war nothing of any importance had been achieved by our civil veterinarians, so that they at least had earned no right to a greater recognition from the Government than that to which they were entitled in 1861. From a costly experience the army had come to value more highly than at first the services of the veterinarian, but where was the Government to secure veterinary surgeons for army service? Certainly not from abroad, at *any* compensation; and surely not from our own country, where there were not enough at the time to properly officer the many regiments of cavalry and artillery, even if *all* of them were employed. The services of some could not of course be secured at any price, while some from physical disability could not withstand the rigors of campaigning. Others, if they served at all, would serve for money and for glory, but with not much care for the *glory*.

This, then, left but a few who had any claim to a knowledge of veterinary medicine whom the Government might hope to secure as Army Veterinary Surgeons, and under the circumstances her compensation must of necessity be such as to render injustice to the qualified veterinarian in that she might protect herself against the inefficiency of the self-instructed; for the great majority, if not all, were to come from the ranks of the latter.

Nor is this all that can be said in defence of the Government's position. When a comparison is made between the compensation given the Veterinary Surgeon and that given the Surgeon, it will be seen that in so far as salary was concerned the former was nearly as well paid as the latter; for the Assistant Surgeon of less than five years' service received but $53.33 per month, with an allowance of four rations per day, two horses while on active duty in the field, and one servant.

The money value of an officer's ration was reckoned at thirty cents, which would add $36 to his monthly pay, making his salary $89.33 per month.

Regarding the allowances of the Veterinary Surgeon nothing is said by the Revised Statutes, but during the war he was

allowed one ration and a horse. The ration was paid in *kind*, not in money, and though common food was furnished, it was sufficient to live upon, and thus saved the expenditure of any money at officers' mess. This last item of expense to the officer certainly could not have been much less than $15 per month, which would leave the Surgeon's income no greater than that of the Veterinary Surgeon. Upon the subject of pay, then, the Veterinary Surgeon had no reason to complain.

But it will be said the Veterinary Surgeon was not a commissioned officer. Very true. Nor were the majority of those who served at that time worthy of commissions. They were ill-bred, ignorant, shiftless men; men without character, principle, veterinary instruction, or ability to earn an honest living. In the ranks, serving as private soldiers, were thousands of men well-bred, aspiring, talented and refined; men from the higher ranks of life, who might grace any of the professions or lend a charm to any society.

To place the illiterate in authority over these by virtue of commissions unearned by bravery in the field, or undeserved from want of intelligence, would have been an injustice which I can scarcely believe would be demanded by the most radical advocate of professional rights.

The simple fact that Army Veterinary Surgeons were not commissioned officers, kept a number of educated veterinarians from entering the army during the war, and it was unfortunate for the profession, and for the Government as well, that her condition was such that the Government could not do more for us than she did. Had the circumstances been favorable, had there been as many Veterinary Surgeons in this country then as now, I have no doubt stress of circumstances would have been instrumental in securing for veterinary medicine that recognition to which we think she is now entitled.

That Congress has in the past been favorably inclined toward veterinary medicine in the army, is evinced by its action in the early part of 1866, when it added a Senior Veterinary Surgeon to the Seventh, Eighth, Ninth and Tenth regiments of cavalry, at the increased salary of $100 per month: and later in the same

year, by appropriating about $12,000 with which to pay Alexander Dunbar for his services for one year instructing the Army Veterinary Surgeons and farriers in an "alleged discovery of a mode of treatment of the diseases of horses' feet."

I know this latter action of Congress has been severely criticised by the friends of our profession, not because of the generosity shown toward the profession, but because the confidence bestowed on Dunbar was misplaced, and he by ignorance, imposition and deceit, unjustly brought the good name of the profession into disrepute; for the public believed him to be a Veterinary Surgeon, and consequently measured the whole profession by him. And inasmuch as he had been endorsed by Congress, who can wonder that the public believed him to be the representative veterinary surgeon of the country?

What an advantage for the profession would it have been, and for the Government also, had Congress heeded the injunction of the late Hon. Fernando Wood, when on that memorable occasion he arose and in his dignified manner opposed the appropriation of $25,000 with which to pay for Dunbar's services. "I am," he said, "advised by those who are judges of that subject, that the man is totally ignorant, that he knows nothing about the diseases of horses' feet, and that he rather perpetrates injury upon the poor animals than produces any benefit to them."

That this action of Congress was uninfluenced by recent events in the history of American veterinary medicine, would probably not be a logical inference, for during the interval from 1863 to 1866, the United States Veterinary Medical Association and the Pennsylvania Veterinary College had come into existence, and while the latter had not as yet accomplished any practical work in the interest of the profession, its endeavors to obtain a charter from the Pennsylvania Legislature had incited some discussions in that body and in the press, and had secured for it a not inconsiderable acquaintance with the public. The New York College of Veterinary Surgeons, whose charter had been obtained in 1857, had gained very little notoriety during this interval of nine years, but she had done some earnest work during the winters of 1864 and 1865 in giving full courses of lec-

tures to her first two classes. Yet so quietly and unostentatiously had this been done, that but a limited acquaintanceship with the general public had been secured, so that it can scarcely be thought this early work of the college had shaped any outside opinion in veterinary matters.

But the United States Veterinary Medical Association, by reason of its many members, who resided in different parts of several of the States, exercised an influence which was more widely felt. Although Congress at this time (1866) may not have known of the existence of this Association, undoubtedly the interest which it had awakened in the minds of stockholders had served to formulate the embryonic conception entertained by the public regarding the importance of veterinary medicine; and thus, imperceptibly as it were, had their influence extended, even in all probability, to the National Legislature.

That the Secretary of War appreciated the value of veterinary medicine in the army, is shown by his order in January, 1868, wherein he directs that all veterinary supplies be purchased from the Medical Department, thereby insuring for the animals medicines of the same quality as that furnished for officers and men. The importance of this order need not be dwelt upon by me; it speaks for itself, and speaks volumes for the perception of the War Department.

From this time on to 1879 the army had been gradually reduced in numbers, and veterinary medicine in connection therewith had received so little attention that it had almost become lost to sight. On the other hand, the veterinarians of civil life had been working hard for the elevation of their profession, and it had grown wondrously.

The New York College of Veterinary Surgeons had flourished, and passing through the chrysalis stage had given birth to that infant of lusty growth, the American Veterinary College. Cornell University was laboring earnestly in the cause. Montreal and Ontario, Great Britain and Europe were sending us many graduates, among whom were some able workers. Veterinary medicine and its advantages had become household subjects of consideration in every district where stock was raised or used.

There was scarce an agricultural paper published that had not its veterinary department, in which subscribers' questions pertaining to the treatment of sick and disabled animals were answered. The medical journals and daily papers made frequent reference to the profession, and recognized its importance and acknowledged its growth. But where was the Army Veterinary Surgeon during all this time? What had Congress or the War Department done for him since 1868? The answer is simple enough, and embraced in a single word—*nothing*. He had in fact, been left to fight his own battles, unaided and seemingly unthought of, for no one appeared to know anything of his condition, his duties, his needs or his prospects.

But out of this gloom, like a sunburst from a darkly overcast sky, came the order of March 27, 1879, in which the Army Veterinary Surgeon was given a very good supply table, and greatest improvement of all, confining all future appointments in the army to "graduates of established and reputable veterinary schools or colleges."

I did not belong to the little corps of Army Veterinary Surgeons at that time, and so do not know with what feelings of pleasure and gratitude they received the order; but civilian as I and entirely unacquainted with the Army Veterinary Surgeon's was, life and lot, a thrill of satisfaction ran through my veins when I first read the order, for I felt that veterinary medicine was freed of a heavy incubus, and that the Army Veterinary Surgeon had the shaping of his future in his own hands; that he might hope in a few years at most, to receive that recognition which countries with fewer claims to a finished civilization, and less pretentions to a motherly fostering of the sciences, had already accorded to his more fortunate though not more deserving brother.

By this action of the War Department true veterinary surgery was recognized as distinct from quackery, and the value of a scientific education conceded. While this was not all that could have been expected from the Government, it was all the War Department had the power to concede.

A list of the Veterinary Surgeons who have served in the army during the interval embraced between the close of the war and

1879, I have not been able to obtain. My knowledge of some of them has been derived from a correspondence with those who still remain in the army, and from the testimony of persons who were acquainted with them. I can learn of but two of these who were graduates, Samuel G. Going and William H. Going, brothers, and both graduates of the Royal Veterinary College of England. They received their appointments from the Secretary of War in 1875. The former was assigned to the First Cavalry, then stationed at Benicia Barracks, Cal., the latter to the Third Cavalry, then as now serving in the department of the Platte.

I think it may justly be said that these two Veterinary Surgeons were the pioneers of army veterinary medicine. They entered the service without the excitement and glamour attendant on war, when so much is expected and ofttimes won, with a full knowledge that serving on the Indian frontier was not unattended with dangers.

They took their lives and training as Veterinary Surgeons into an army with which they could have had no sympathy, either by birth or education, and there as representatives sought to elevate their profession, which they found without status, while their services were without adequate compensation. Few perhaps appreciate the extent of the sacrifice which these Veterinary Surgeons made. The opportunities of the Veterinary Surgeon in civil life in this country are and have been many, and they as graduates of several years standing and experience had but little to contend with in obtaining establishments of their own, had they seen fit to make the attempt. In the army they could have no hope of earning a competence, even during a long life of service, and yet we find them persisting in their course, struggling for the rights of their profession without assistance, in a case that to them must at that time have looked hopeless indeed.

Samuel G. Going made the first report on record in the War Department ever made by a qualified Army Veterinary Surgeon. It bears date October 11, 1875, and gives the history of an outbreak of glanders in the First Cavalry, which lasted about two years. When he arrived at the post, shortly after his appointment, he at once recognized the nature of the disease, and out of

180 horses stationed there, immediately killed 79. Before the regiment was finally rid of the disease 170 animals were destroyed, entailing a loss of at least $20,000, besides the destruction of stables, blankets, cinchas, halters, etc., which was necessary to prevent further contagion. The War Department recognized the value of the services rendered by publishing the report in an official circular in December, 1875.

About the same time, he prepared and drafted a bill to be presented to Congress, in which he set forth the value of the veterinarian's services to the army, his claims for a commission, and the advantages which would thereby accrue to both of the interested parties. His petition, the first of the kind made in behalf of the Army Veterinary Surgeon, unfortunately bore no fruits.

An untimely death at the hands of the Indians in 1876 prevented his further efforts in this direction, and the profession lost in him its most willing worker in the interest of army veterinary medicine.

The brother, William H. Going, while less conspicuous in individual action looking to the elevation of the profession, has nevertheless ardently seconded all endeavors in that direction, and has won for himself the esteem of the officers of the regiment with which he has served.

The profession owes them both a debt of gratitude for entering the army at a time when there was no distinction made between the educated and the ignorant, the graduate and the empiric.

Of the non-graduates serving in the army during this time, John Tempany served in the First Dragoons from 1858 until the end of his term of enlistment, when he was discharged, being at the time in the army of the Potomac. After a short time in civil practice in Jersey City, N. J., he returned to the service and was made Acting Veterinary Surgeon of the cavalry recruiting depot at Carlisle Barracks, Pa. From this point he was transferred to St. Louis Barracks, Mo. In 1872 he received appointment as Veterinary Surgeon to the Seventh Cavalry, but resigned in

1865. In March, 1879, he was appointed to the Ninth Cavalry, where he now serves as Junior Veterinary Surgeon.

"Dr." Huttinger was with the Seventh Cavalry for several years prior to his death in 1872, when the regiment was guarding a surveying party up the Yellowstone River, in Dakota. He was a great favorite with his regiment, being a kind, genial old man, but with no interest in the profession beyond a personal one.

"Dr." Stein, now of St. Paul, Min., served, I am told, for a number of years in the Seventh Cavalry also, but during what period, I do not know.

Solomon Bock in 1876 received appointment to the Fifth Cavalry, then stationed at Fort D. A. Russell, near Cheyenne, Wyoming Territory. He had received instruction during one session of the American Veterinary College, which he attended during the winter of 1875–76. Also some office instruction under one of the graduates of the college he attended. I have no knowledge of his having made any efforts to elevate the profession in its standing in the army.

Robert Schauner served for a length of time of which I have no definite knowledge, in the Fourth Cavalry, at Fort Riley, Kan. He too had attended one session at college, the New York College of Veterinary Surgeons, during the winter of 1872–73. He was discharged from the service in 1880, and his application for reappointment as an instructor in veterinary medicine at Jefferson Barracks, Mo., made shortly afterward, was denied by the Secretary of War.

Samuel Burdett has also served in the Ninth Cavalry prior to 1879, but for how long a time I do not know.

My knowledge of S. W. Prentice, Veterinary Surgeon to the Tenth Cavalry, is also equally limited.

This, then, is the limited and defective history of veterinary medicine in the United States army, as I have been able to glean it with the facilities which I have had at hand, up to the 27th of March, 1879, when a new era begins. Those were the dark days before the dawn. Let us be thankful that they are past.

The period from March 27, 1879, to the present, can best be included in a consideration of

THE PRESENT CONDITION OF THE ARMY VETERINARY SURGEON.

In accordance with General Order No. 36, A. G. O., dated March 27, 1879, no one can receive an appointment as Veterinary Surgeon to the army unless he is first a graduate from an established and reputable veterinary school or college.

But the order, not being retroactive, left the unqualified Veterinary Surgeons already in the army in possession of their appointments, so that it will be some time before the army veterinary corps will be composed of graduates only.

There are two classes of Veterinary Surgeons in the army at present, as follows:

1st. "Inspecting Veterinary Surgeon," or "Department Veterinary Surgeon," employed in the Quartermaster's Department for the inspection of horses and mules presented to the Government for purchase; for the treatment of sick and disabled animals belonging to the Government at the headquarters where stationed; for the inspection or treatment of public animals at any post in the department; the review of all inspection reports in which animals are condemned to be sold or destroyed, and the revision, with recommendation, of all requisitions for veterinary supplies.

As yet there is but one Department Veterinary Surgeon serving in the army. A. A. Holcombe, D.V.S., received the appointment to the department of the Missouri in August, 1880, and is stationed at Fort Leavenworth, Kans., the headquarters of the department. His salary is $150 per month, with transportation, and $4 per day added when away from his post on duty.

2d. The "Regimental Veterinary Surgeon" is allowed only to the ten cavalry regiments of the army, the artillery being without his services.

The candidates for appointment in a regiment must make application to its commanding officer, who if he sees fit, forwards the application, "supported by the requisite proofs of learning and skill," to the Secretary of War, who issues the warrant, providing he is satisfied with the candidate's credentials, and there has been no objection from "intermediate commanders." The Regimental Veterinary Surgeon ranks as a Sergeant-Major, the highest non-commissioned officer of the regiment.

In the regiments where two Veterinary Surgeons are serving, one ranks as the Senior and the other as the Junior Veterinary Surgeon. As remarked above, the date of warrant determines the seniority of rank.

At present but three regiments have Senior Veterinary Surgeons, the Seventh, Eighth and Ninth. In the Seventh William H. Going, M.R.C.V.S., appointed in 1875, is the incumbent, stationed at Fort Meade, Dakotah Territory, the headquarters of the regiment.

Peter Peters, V.S,, a graduate of the New York College of Veterinary Surgeons, was appointed senior of the Eighth in April, 1880, and is stationed with the headquarters of the regiment at Fort Clark, Texas.

The senior of the Ninth, a colored regiment, with headquarters at Santa Fe, New Mexico, is Samuel Burdett, date of appointment unknown. I know of but two advantages which the senior enjoys not vouchsafed to the junior—a higher salary and generally a better post and larger garrison. The pay of the Senior Veterinary Surgeon is $100 per month. The pay of any other Veterinary Surgeon in the army is $75 per month. He is allowed besides his salary, a horse, quarters and fuel, and medical attendance. While away from his post, on duty under orders, he is entitled to transportation and a per diem of $4.

The First Regiment of Cavalry is without a Veterinary Surgeon. A graduate of the R. C. V. S. received the appointment to this regiment in the early part of 1880, but died of pneumonia the next day after his arrival. The headquarters of the regiment are at Fort Walla Walla, Washington Territory.*

The Second Cavalry Regiment, with headquarters at Fort Custer, Montana Territory, has for Veterinary Surgeon James Humphries, V.S., a graduate of Toronto, Canada, who received his appointment in September, 1879.

The Veterinary Surgeon of the Third Cavalry is C. L. Hingston, M.R.C.V.S., who received his appointment in June, 1880,

* Since the above was written, I have been informed that M. J. Treacy, M.R.C.V.S., has received appointment to this regiment, but have not had opportunity to verify the statement.

and is stationed at Fort D. A. Russell, near Cheyenne, Wyoming Territory.

The Fourth Cavalry, with headquarters at Fort Riley, Kans., is without a Veterinary Surgeon, although application was made for the position several months ago by D. J. Dixon, D.V.S., a graduate of the American Veterinary College.

In the Fifth Cavalry, with headquarters at Fort Laramie, Wyoming Territory, the Veterinary Surgeon is Solomon Bock, appointed in 1876.

Walter H. Hornblower, D.V.S., a graduate of the American Veterinary College, received appointment to the Sixth Cavalry in June, 1880, and is stationed at Whipple Barracks, near Prescott, Arizona Territory.

The Junior Veterinary Surgeon of the Seventh Cavalry is Cecil V. Leverett, M.R.C.V.S., who received his apppointment in 18—, and is stationed at Fort Abraham Lincoln, Dakota Territory.

The Junior Veterinary Surgeon of the Eighth Cavalry is John B. Going, V.S., a graduate of the New York College of Veterinary Surgeons, whose appointment dates from April, 1880, and who is now stationed at Fort Ringgold, Texas.

The Junior Veterinary Surgeon of the Ninth Cavalry is John Tempany, whose appointment dates from March, 1879; stationed at Fort Cummings, New Mexico.

S. W. Service, who is Veterinary Surgeon to the Tenth Cavalry, I presume would be called the Junior of that regiment, but would become the Senior on appointment of another Veterinary Surgeon. He is stationed at Fort Concho, Texas. Date of appointment unknown.

PATHOLOGICAL PHYSIOLOGY.

CONTRIBUTION TO THE STUDY OF THE TRANSMISSION OF TUBERCULOSIS—INFECTION THROUGH THE JUICE OF WARM MEATS.

By M. H. Toussaint.

On the 29th of March, 1880, I had the honor of presenting to the Academy the first results that I had obtained by my re-

searches upon tuberculosis. It was then a question of the infection of eight pigs, either by the ingestion of the tuberculous lung of a cow, or by inoculation of the blood of a small pig, born of a tuberculous parent, which fed him and had died with the disease.

At the sitting of the 28th of June, M. Bouley presented you, from me, a bottle containing pieces of lung, liver, spleen, of the phrenic center, diaphragm, and lymphatic glands, presenting advanced lesions, obtained from a five-month-old pig, after subcutaneous injection of two cubic centimeters of the juice of muscle of a tuberculous cow, obtained by pressure.

Since that time I have studied tuberculosis in its various modes of infection, and I can say, after a number of experiments made upon pigs, rabbits and cats, that *no contagious disease possesses a greater virulency.*

Inoculation in the rabbit gives as positive results as anthrax. It is so also in all other species used for experiments.

In tuberculosis, all the fluids of the economy, the nasal mucus, saliva, serosity from the tissues, and urine, are virulent, and can originate the disease. As to the virus itself, of which I shall give you the nature later on, it resists and keeps its action at a temperature which *kills the bacteridie of anthrax.*

If, in human subjects, tuberculosis seems to be less virulent, it is because it often assumes a chronic form, which may continue for years, and often even end in recovery; yet it is no less dangerous, and physicians know that the number of recoveries can be counted. Contagion is also very difficult to observe, on account of the slow and gradual appearance of the symptoms.

Here are experiments which demonstrate *the resistance of the virus, and the danger of the use of the meat and other remains of tuberculous animals.*

First, by squeezing with a press, I extracted from the lung of a tuberculous cow, having an œdema of the anterior lobe, a certain quantity of fluid, slightly loaded with virus, almost transparent. One c.c.5 of this was injected under the skin of the inferior part of the ear of a *young pig* and ten drops to *two rabbits.* I then injected the same quantities of the same fluid, heated in a water bath to 55°-58° for ten minutes, to *four pigs* and *four rabbits* in the same regions.

These animals, placed in several locations, were kept under observation. I could easily observe the development and ordinary progress of the disease in local tubercles and hard swellings of the parotid ganglion.

The general infection showed itself very rapidly in all these animals. It is a curious fact that the rabbits, which received the heated fluid, died first.

One of the pigs' was killed two months after the injection. The post mortem showed a local caseous tuberculosis, and an enormous parotid ganglion with cretaceous spots. The lung showed great quantities of grey granulations, and there were tubercles in the spleen and liver.

After three months, another pig was killed, as was also the one used as proof which had used the fluid unheated. The difference between the lesions of the two was very slight, though they were more advanced in the last.

The pulmonary tubercles of the pigs which had received the heated fluid were then inoculated to rabbits. They became diseased, and two of them, killed three months after, showed numerous lesions in the lung, spleen, kidneys and serous membranes.

Two of the pigs inoculated with the heated fluid are yet alive, after five months; one, however, is nearly dead.

Of the four rabbits inoculated with heated fluid, one died accidentally after thirty-five days. In this case the parotid ganglion was caseous, but the general infection did not yet exist. The other rabbits died with general tuberculosis, from the 164th to the 170th day; one presented lesions of the bones, largely developed on the anterior legs; the articulations of the shoulder and arm contained caseous pus, the articular surfaces and even a part of the diaphysis being entirely destroyed.

As to the rabbits inoculated with the cold fluid, one was killed after forty-three days, and exhibited numerous gray tubercles in the lungs and liver. The second, a doe, is yet living. Since the inoculation she has had three litters, in the first of which the little one died the day after birth. In the second she had five, which are kept with those of the third, in order to study the effect of heredity. As the doe is now in an advanced state of tuber-

culous disease, it will be interesting to follow the various conditions through which her little ones will pass.

Second, *slices of muscles of the thigh of a tuberculous sow were placed in a chafing-dish and heated by gas.* They were cooked rare and were then pressed, and the fluid obtained inoculated to two rabbits; two others receiving non-heated juice of the same muscles. *These last died in* 120 *days, almost at the same time, with caseous pneumonia, and tubercles in all the tissues.*

Of the two rabbits which received the heated juice, one was killed the 56th day after inoculation, and had local and ganglionic lesions, with grey granulations in the lungs, omentum and spleen. The other is yet alive, but in a declining state, and must soon die.

These facts are significant. They evidently prove the danger of both raw meats and of the juice of muscles scarcely heated, such as is given to children and weak persons. The infection takes place as easily by ingestion as by inoculation. It is indeed more correct to say that the disease inoculated through the digestive apparatus acts more rapidly, as all the intestinal ganglions may be affected together, which implies that the points of inoculation are more numerous than in the simple puncture of the skin.

It is generally the meat of beeves which is used to prepare meat juices. Many of these animals are tuberculous, and when one lung contains grey granulations, one may conclude that the infection is complete. Still, in the slaughter-houses, animals whose lungs are entirely diseased are seldom refused. I have often seen lungs containing as much as 35, even 40 kilogs. of tuberculous matter, taken from a cow whose meat had been allowed to be sold.—*Gazette Medicale.*

COMPARATIVE PATHOLOGY.

UPON THE PATHOGENY AND PROPHYLAXY OF PLEURO-PNEUMONIA IN CATTLE.

By Dr. Poincare.

Our knowledge of the true nature of contagious pleuro-pneumonia is not yet complete, as the disease resembles neither the true inflammatory pneumonia, nor those diffuse and passive inflam-

mations which are met in other forms of pyrexia. The late researches aiming to discover some kind of parasite, either in the exudations, made by Weiss, Zurn, Hallier, Bruylants and Veriest, have not yet succeeded in showing the special agent of contagion.

Dr. Poincare has had the opportunity of examining the lungs of eight cows, dead with pleuro-pneumonia, six of which were in a barn at some distance from the city, and two in one of the suburbs of the same place, and in all cases he observed the following phenomena: In the meshes of the substances filling the bronchial cavities were found detritus, coming evidently from external sources, particles of straw, hay, starch granules, etc., indicating a state of nervous depression which had prevented the action of the reflex expulsive force. With these vegetable remains, he had also found threads of a cryptogamic production living, and manifesting its vitality after the death of the animal.

After a variable length of time, the myceliums of these parasites, twisting the meshes of the pulmonary structure, increase rapidly in an aqueous fluid, such as sugar water, as the penicellium do. They are flattened, ramified, and present some small vacuums here and there. The dimensions varied from 0^{mm}, 0084 to 0^{mm}, 0035.

The objections of the owners of animals have prevented Dr. P. from trying the experimental development of the disease by exclusive inoculation of this cryptogam; and thus he is unable to affirm that it is the first cause of pleuro-pneumonia. Experiments ought to be tried.—*Revue d'Hygiene.*

ETIOLOGY AND PATHOGENY OF THE VARIOLA OF THE PIGEON, AND DEVELOPMENT OF THE INFECTIOUS MICROBS IN THE LYMPH.

By Dr. Jolyet.

Dr. Jolyet has found in the blood of pigeons, examined with the microscope, when they have been affected with variola, a large number of living microbs. The alteration is found in all affected birds, whether the disease developes itself apparently spontaneously, or is the result of inoculation. The first and second day after the inoculation, the blood, under the microscope presents

nothing abnormal, but towards the end of the third day, microbs begin to be seen, and during the following days, they increase largely in number, and when the pigeon presents the manifest symptoms of the disease, the preparation shows myriads of moving microbs.

The incubation corresponds with the development of the parasite; the invasion shows itself when it has multiplied, and the eruption coincides with its gradual diminution. The dry pus of the pustules contains characteristic microbs in great number, which like those of the blood, may produce the disease when inoculated on healthy subjects. When, in a certain number of pigeons, the cutaneous eruption is completely absent, and when at the same time the other symptoms take place as in ordinary cases, post mortem examination reveals then a true intestinal pustulation.

Dr. Jolyet considering that the blood and the lymph are preeminently the media of culture of the microbs of variola, either in animals or in man, has noticed that the examination of the blood often gives only negative results; when even the blood is almost healthy in appearance, the lymph is full of living microbs.

Similar experiments, made on animals reputed to be unable to contract variola (dogs and rabbits) because they have no cutaneous pustules, have given identical results, that is, a characteristic pustulation of the microbs in the lymph, as they can produce the eruption and complete variola in animals which take it naturally.—*Revued d'Hygiene.*

EXPERIMENTAL PATHOLOGY.

UPON EXPERIMENTAL TUBERCULOSIS.

By M. D. BRUNET.

The experiments of Mr. Toussaint upon the inoculation of tuberculosis have not proved sufficiently convincing to fully satisfy my judgment.

I have observed, as others have done, that the inoculation of foreign substances, other than tubercles, in the sub-cutaneous

tissue of the rabbit, very often produces tubercles in the lung of this animal.

I have inoculated nineteen rabbits, seven times for cancer, six times with pus simply, and six times with tuberculous matter.

Fourteen of these animals have become tuberculous; of which six had been inoculated with virus of cancer, three with pus and five with tuberculous matter.

The five other rabbits recovered.

These inoculations were performed in 1869.

The inoculation of cancer would then produce tuberculosis as well as tubercle itself, a fact which would tend to prove that the inoculated matter has not any specific influence, but acts specially as a foreign body, by producing an ambient inflammation to which tuberculosis seems due.

Pus, being easier to resolve than solid matter, produces a lesser inflammation, and hence, less often, tuberculosis.—*Gazette Medicale.*

EXTRACTS FROM FOREIGN JOURNALS.

NON-PARASITIC AFFECTIONS, RESEMBLING THAT OF HYDATIDS ON THE BRAIN, IN SHEEP.

By M. Baillet.

The shepherd of the farm annexed to the Alfort School observed in his flock a sheep which presented marked symptoms of goggles. There had appeared suddenly, contrary to what is seen in ordinary tournis. The animal was three years and a half old. Scarcely had the flock left the barn when this sheep was noticed to stand back, walking with difficulty and with a sideway motion, and losing his way. He was brought home. The next day the same symptoms showed themselves, and two days after he was brought to the school to be killed.

On that day, says the author, I examined him and thought that I had evidently a case of giddiness. At rest he held his head low down and resting against the wall, and seeming to push against it. The pupils were well dilated on both sides. The head had no hairs in places, the eyes were somewhat injected, the cornea

offered some superficial lesions, producing a quite marked opacity, probably the result of blows against outside surfaces.

In the frontal region, on a line with both eyes, a little to the left of the median line, was a small tumor of the size of a hazel nut, hard and bony, to which little attention was paid. When the animal was forced to move, he was with little difficulty made to turn from left to right, but if left free in his movements, he turned to the left in a circle, which diminished little by little in diameter, especially after some excitement, until he seemed to turn round almost on himself as an axis. When killed, the post mortem showed that the tumor observed on the frontal region was only a local elevation of the left frontal sinus plate, and that in the diverticulum thus formed there existed a greenish-yellow pus, very thick, with no well marked odor, and evidently not of recent formation. The mucous membrane of the sinus was covered with greenish-yellow granulations. Above the orbits the floor of the sinus was considerably atrophied, and in some places the plate of the bone had disappeared. Similar atrophy still more marked existed on the level of the septum which separates the sinus from the cranial cavity. The brain was felt through. On the right side the frontal sinus was the seat of a slight inflammation. The brain at the point corresponding with the atrophy of the bony septum, showed the meninges highly inflamed and adherent to the brain sub stance. This had undergone superficial changes. The inflamed parts had a granular aspect, with a greenish-yellow discoloration. This occupied the anterior part of the parietal, close to the limits of the frontal lobe.—*Archives Veterinaires.*

A NEW PATHOGENIC BACILLUS.

By C. S. Eberth.

A bacillus has been found in the body of a badger belonging to the Zoological Garden, which had died after several days of sickness. It was principally on the periphery of small abscesses of the liver that it was observed. Its larger proportions distinguish it from the bacillus anthracis. This case is analagous to the bacterian hepatitis of young lambs, observed by Rivolta.— *Virchow's Archives.*

HOW THE BACILLUS OF SPLENIC APOPLEXY ACTS IN PRESENCE OF EXTREME LOW TEMPERATURES.

By A. Frisch.

The cooling means employed in these experiments were of an extreme intensity—solid carbonic acid sprinkled with ether. The glass tubes were filled with a fluid highly virulent, obtained from animals affected with the disease, closed with spirit lamps and placed in the cooling mixture, everything being then put under a pneumatic machine. A temperature of —111° C. was obtained and recorded by a sulphate of carbon thermometer, and kept for four hours. Bacilli exposed to such extreme temperature could not develop themselves, when inoculated into living tissues, with their ordinary facility.—*Sitzungst der Ak.*

INJECTIONS OF RABID VIRUS INTO THE CIRCULATION DO NOT CAUSE THE APPEARANCE OF THE DISEASE, AND SEEM TO GIVE IMMUNITY.—RABIES MAY BE TRANSMITTED BY THE INGESTION OF RABID MATTER.

By M. V. Galtier.

Since the researches I have made upon rabies, I have several times injected rabid virus into the jugular veins of sheep, and have never seen the disease appear. Moreover, the subjects thus inoculated a first time, having afterwards been utilized for other experiments, and having been inoculated with the same virus by other ways, also resisted the disease. The principal facts observed are—

1st. The 4th of May, 1879, the inoculation of two sheep, one receiving the virus in the jugular, the other in the subcutaneous tissue. This last case becomes mad on the 10th of June and dies two days later. The other resists, and he is inoculated again by a different process on the 9th of October and the 23d of December, but does not become mad. He is kept for other observations.

2d. The 9th of October, 1879, three sheep are inoculated with rabid virus, two by pricks and scarifications, and one by intravenous injection. The two first die with rabies on the 26th and

27th of November; the other still survives, and on the 26th of March, 1880, he is reinoculated by pricks and scarifications, which is repeated on the 8th of July. He is killed on the 19th of December, without having contracted the disease.

3d. On the 19th of December, 1879, two sheep receive rabid saliva, one by hypodermic, the other by intra-venous injection. The first dies mad the 24th of January, 1880; the other, healthy on the 24th of February, is subsequently at three different times inoculated by other processes; two months after the last operation he remains free from the disease.

4th. December 31, 1879, inoculation of two rabbits by pricks, and of two sheep by intra-venous injection. Death of the rabbits by hydrophobia. Reinoculation by scarifications of the two sheep. State of health remains perfect December 9th, 1880.

5th. April 19th, 1880, inoculation of two rabbits by pricks, and of a sheep by intra-venous injection. Death of the rabbits by rabies April 30th and May 9th. Reinoculation of the sheep by pricks and hypodermic injections; health continues, and they are used for other experiments on the 29th of January, 1881.

6th. February 3, 1881, two sheep receive rabid virus, one by hypodermic, the other by intra-venous injection. The first dies mad on the 2d of March, the other resists and is reinoculated by pricks and scarifications on the 13th and 27th of March. On the 28th of July he is perfectly healthy.

7th. March 13, 1881, inoculation of a goat and three sheep. One of these resists pricks and dies mad April 22d. The two others and the goat inoculated by intra-venous injection are reinoculated by scarifications March 27th. July 28th finds them healthy, and they are again inoculated.

8th. February 19, 1881, five rabbits receive in their drinks a mixture of water and rabid saliva, very virulent. Three resist, and two die mad March 2d and 9th.

The following are the conclusions from these experiments:

1st. Injections of rabid virus in the veins of sheep do not develop the disease, and seem to give immunity.

2d. Rabies may be transmitted by the ingestion of rabid matter, and though we are yet ignorant of the locality where the inoculation takes place, it is not less demonstrated that there is

danger of contracting the disease for all persons or animals which, in whatever circumstances, might have introduced rabid virus in the digestive apparatus.

I am verifying the fact of the immunity by intra-venous injection by experiments on dogs, and am aiming to ascertain whether intra-venous injection of the virus done the next or the second day after a bite or a rabid inoculation may preserve from rabies. —*Archives Veterinaires.*

MEAT OF THE DOG FOR PUBLIC CONSUMPTION IN BELGIUM.

Having been requested to report upon the propriety of allowing the meat of dogs to be introduced for public consumption with that of cattle, horses, and other herbivorous animals, the Council of the Veterinary School of Belgium has come to the following conclusions:

1. There is no reason for preventing the sale of the meat of dogs for public use any more than that of any other ordinary butchers' meat.

2. It ought not to be exposed for sale unless it has been submitted to the inspection of an official veterinary inspector, the inspection to be made upon the living animal immediately before it is killed.

3. As part of this inspection, it is recommended that the meat must be rejected from consumption of (*a*) dogs in poor condition of flesh, and (*b*) dogs which present symptoms and lesions of disease of some seriousness, amongst which may be mentioned rabies, even when it is only the object of suspicion; rachitism, dropsy, distemper, suppurative tumors and those of malignant character, gastro-enteritis, hepatitis, peritonitis, any serious diseases of the lungs and pleura, etc.; that whether there is disease or not the œsophagus, stomach and gastro-intestinal organs be thrown away; that the meat be sold in a special market and labelled according to its kind; and to reject all meat of animals which have not died by jugulation (or bleeding) as certified by the veterinary surgeon.—*Annals of Brussels.*

COMPLETE OBLITERATION OF THE BLADDER IN A SIX-WEEKS-OLD CALF—CONDITION COMPATIBLE WITH HEALTH.

By M. Lapotre.

A young calf in good condition was slaughtered when six weeks old. This animal had always been very lively during its life, and had been exclusively fed on milk, which he drank with avidity. His owner says that the cutaneous transpiration was always very abundant, the hairs being always covered with a true dew of perspiration. The butcher, in dressing it, was surprised to find that the bladder presented anatomical characters which differed from any he had ever observed before. He removed it carefully, with the urethra and ureters, and sent it to me for examination.

The bladder has the form and volume of a goose egg. The external surface is slightly ecchymosed. On pressing it between the fingers, no fluid escapes through the urethra, though the organ seems filled with a matter without consistency. The canal of the urachus is absent. A longitudinal incision made on the superior plane of the bladder, about two centimetres from the neck, shows it to be filled with greyish pus quite thick and odorless, in the center of which float some quite thick masses, which seem of a sebaceous nature. The openings of the ureters are entirely obliterated by a little nodosity, indicating that no urine has at any time been poured into the bladder. There is no neck and there is no communication between the bladder and the urethra. The vesical mucous membrane, in a thickened state, almost fills the three openings of the organ, which represents, in this manner, a sort of vase hermetically closed. It is thus that in injecting water through the urethra it stops at the neck, which forms a true infundibulum of this canal. The ureters are larger in diameter than usual, and are hard and uncompressible under the fingers. Incised lengthwise, a reddish filamentous matter is found in them, which seems like clots of blood adherent to the mucous membrane. The kidneys offer nothing particular, though it is probable that their function must have ceased.—*Journal of Zootechnie.*

STRANGULATION OF THE SPERMATIC CORD, RESEMBLING STRANGULATED INGUINAL HERNIA IN THE HORSE.

By H. Nocard.

A colt eighteen months old had been sick since 2 o'clock in the morning. From the history of the case, he was supposed to be affected with strangulated hernia. He was first taken with violent colic, and continued ever since to suffer extreme pains, kicking, throwing himself on the ground, rolling and resting on his back, and constantly looking towards the left flank.

At the time of visit he is quieter. When loose, he assumes the complete decubitus on the right side, with the legs partly flexed; the face is contracted, the body covered with perspiration; the respiration accelerated and irregular, accompanied with low moaning; pulse small, quick and hard. The exploration of the testicular region reveals the following appearances: On the right side, the testicle is down and moveable, the cord flexible, painless and easily detected with the fingers; on the left side, on the contrary, the scrotum is retracted, the testicle drawn and fixed; the cord very voluminous, very painful, and impossible to unroll; rectal examination is impossible in the standing position, and in the dorsal it gives but imperfect results; the left inguinal ring seems dilated and wider than the right, and is filled with an abnormal mass, but it is impossible to find the two ends of the intestinal fold supposed to be passed through it. This was attributed to the difficulty of manipulation through the rectal walls, and the external local signs seeming sufficient to justify the diagnosis, the operation was proceeded with.

Nothing important appeared in the first steps of the operation. A longitudinal incision was made of the scrotum and dartos, with enucleation of the testicle, showing it covered with the parietal layer of the vaginal sheath; puncturing that covering and making a longitudinal incision with the directory, the opening of the sheath allows the flow of about one deciliter of very bloody serosity, and exposes—not the supposed ruptured intestine, which did not exist, but an enormous spermatic cord, of the size of the arm, gorged with blood, with venous cords and lymphatics, some

as large as the thumb, and others as the index finger; presenting, in fact, all the signs of the most complete strangulation; through the albuginious tissue, the testicle appears of a bluish color.

The spermatic cord so completely filled the ring that it was impossible to introduce the finger through it. This became easier on the puncture of the largest venous or lymphatic divisions, which allowed the escape of a large quantity of blood and lymph, followed by a diminution in the size of the cord, and allowing the introduction of the finger through the ring, which was found to be very small.

A clamp applied upon the covered cord, and the excision of the testicle, closed the operation, which ended successfully in the recovery of the patient.—*Archives Veterinaires.*

FRACTURE OF ALL THE SESAMOID BONES.

By R. F. Frost, M.R.C.V.S., A.V.D., Rangoon, Burmah.

On yesterday, the 3d of August, I received the following communication: "I was driving one of my cousin's ponies this morning, from the mill to the office, when he suddenly stopped, and I suspect with good reason, for, judging from the appearance of his off fore leg, I should say that his sinews had given way. The skin is not broken, but I suppose there is nothing to do but shoot him. Would you see him before this is done?"

I visited the pony at once, and found him in the following condition: The inferior extremity of the off fore metacarpal bone had protruded through the skin, and the animal was resting on the broken end of the bone, somewhat after the manner of a man standing on a wooden stump. The near fore fetlock had descended, and the pony was resting on it to a slight extent. Both hind fetlocks had descended in a like manner, but not to such an extent as the near fore.

On manipulating the joints I found considerable crepitus, which convinced me that fracture of the sesamoids had taken place in all the limbs.

The animal was destroyed at once.

History.—The pony was a "shan," about sixteen years of age, and had been in his late owner's possession for about eight years, during which time he had been remarkably free from lameness. Recently he had been doing very light work, as he was looked upon as an old friend. His only labor consisted in being driven to the bazaar, a distance of about three miles, every morning, in a light cart, by the owner's butler. I have known the animal for more than three years, and the only occasion on which he required medical attention was about four months ago, when he was pricked in shoeing; but he soon recovered and was again driven to market, as usual, every day.

My first inquiry, on meeting the gentleman who drove him yesterday morning, was as to whether he had, in driving, struck the pony or caused him to make any sudden forward movement. But he assures me that he did nothing to frighten or excite him. He says he was trotting slowly along, and that for the first half of his journey the animal seemed free and anxious to go, but that after a while he thought he seemed lazy and inclined to slacken his speed. Soon afterwards the pony stopped altogether, and the driver, "thinking that something was wrong with a portion of the harness, or that a stone had got fixed in the foot," ordered the syce to dismount and examine the harness and feet. On the syce reporting that all was right, the pony was again urged forward; but, from the peculiarity of the action, which now became a limp, the owner dismounted and found matters as stated in the first part of this paper.

A description of the morbid condition of the parts, examined twenty-four hours after death, may interest your readers, and in hopes that such may be the case I give the appearances of each limb separately.

Left front limb.—On removing the skin from the knee to the foot, I find considerable infiltration into the connective tissue, from a little below the knee to the coronet. This is owing to rupture of some of the small blood-vessels. On removing the areolar tissue, I find the perforatus tendon slightly lacerated in the immediate neighborhood of the joint.

The perforans tendon is almost completely lacerated at the

point where it glides over the sesamoids. On elevating the tendons, the joint is found open and the sesamoid bones broken into several pieces. Portions of the bones are adhering to the inferior extremity of the suspensory ligament, and other portions to the superior extremity of the inferior superficial sesamoid ligament. Both the inferior articular surface of the large metacarpal and the superior articular surface of the os suffraginis give indications of long-standing disease. Absorption of the articular cartilage has taken place to a considerable extent.

Right front limb.—To give anything like an accurate description of the state of this limb is quite out of the question, for the simple reason that the joint is little more than a mass of broken bones, lacerated tendons and ligaments. The main features to be noticed are fracture of the sesamoid bones into innumerable small pieces, rupture of the fibres of the suspensory ligaments, and both a longitudinal and a transverse fracture of the inferior extremity of the large metacarpal bone. The longitudinal fracture has taken place directly through the centre of the bone, and the transverse breakage is about two inches from the extremity.

Right hind limb.—There is considerable infiltration of blood into the areolar tissue around the joint. The tendons are in a normal state. There is a transverse fraction of each sesamoid, near to its base, and there is laceration of the fibres of the lower extremity of the suspensory ligament.

Left hind limb.—Presents exactly the same appearance as the right hind joint.

I have little more to add beyond the fact that the sesamoid bones in all four limbs seemed to have been in a diseased state for a considerable period previous to the accident. The bones, so far as one could judge by the naked eye, appeared to be spongy and brittle; and this, I have little doubt, was the case, considering the extent of the fractures, some of the bones having been broken into innumerable small pieces.

One is naturally puzzled to account for such extensive fractures as occurred in this case, more particularly as the causes in operation seem to be inadequate to produce such marked results. It seems almost incredible that an animal trotting gently along a

smooth road, with a light cart behind him, should suddenly give way in the manner described.

Had he been suddenly and violently urged forward, I could understand fracture occurring in one or both fore limbs, but I am quite at a loss to account for the fracture of all the sesamoid bones, and one large metacarpal bone at the same moment, unless it be allowed that very extensive disease of the bones existed previously.

If fragilitis can exist without an animal showing the least sign of lameness, or even stiffness, I can account for the fractures in this case. I have frequently seen the animal in question, both in harness and when being led out of the stall for my inspection, and never, except when he suffered from the prick of a nail, did he show any lameness.

About two years ago a case of fracture of the sesamoids of both fore limbs occurred in a pony five years old, when being galloped over the "maidan" (or plain) at this station. The ground was as smooth as a billiard-table, and there had been no previous disease, so far as I could tell. (I had carefully examined the pony a short time previously.) I must add that this pony had been taken over a few small fences a short time before the break-down, and I have no doubt that it was while taking one of the jumps that the breakage occurred, though the broken pieces of bone did not separate immediately. It is frequently the case that displacement does not occur for a considerable time after the fracture has been caused. In this case the pony walked about on the ends of his cannon bones, with the lower portions of the limbs dangling about as if they did not belong to them.

Not quite a month ago a gentleman of this station was driving an old pony in a light cart. The animal had been the subject of repeated attacks of rheumatism, and as a consequence there was considerable thickening of the tissues around the fetlock joints. On the occasion in question the owner touched up the old animal rather smartly with the whip, and immediately afterwards the pony came to a standstill, and could not be induced to move further. I saw the animal soon afterwards, and found that the near hind fetlock was resting on the ground, but there was no crepitus.

I recommended that the animal be destroyed, and on making a post-mortem examination of the limb, I found both fracture of the sesamoids and rupture of the suspensory ligament.

Fracture of the sesamoid bones of the front limbs is not a rare occurrence in India, but I do not remember to have heard of a case in which the sesamoids of all four legs became involved at the same time.

Horses, when they are very fresh and succeed in breaking loose, are liable to injuries of this nature, especially if they jump fences when the ground is very hard; but I think few cases occur under similar circumstances to those narrated in this instance. The case of fracture mentioned as having happened to the five-year-old pony took place during the monsoon, when the ground was soft and elastic.— *Veterinary Journal.*

SERIOUS INJURY TO A HORSE: RECOVERY.

By C. CRESSWELL, M.R.C.V.S., Nottingham.

On April 25th a bay six-year-old cart mare, in good condition, belonging to W. Collison, Esq., of Nottingham, in galloping away broke down the closed gates of a railway crossing, and came in contact with a passing train going at the rate of about twenty-five miles an hour. On examination one hour afterwards, I found the following lesions: A transverse fracture of the frontal bones throughout their whole breadth, two inches of the orbital process of the left frontal bone being detached. The malar ridge on the left side was broken transversely in two distinct parts. The inferior portion of the orbit, comprising the lachrymal bone, portions of the superior maxillary, and the malar, was fractured in many places, and portions detached. The inferior maxillary was broken at the neck, two inches below the joint, and the jaw consequently movable in any direction. On taking away portions of the detached bone, the parietal was found to have a longitudinal fracture, causing a fissure one-eighth of an inch wide, through which the cerebral membranes were visible. The eye was of course invisible, and the jugular vein on the same side was

ruptured, with, however, but slight injury to the skin. Pulse 24; temperature 99°. Great dullness and general depression, and animal rapidly becoming semi-comatose. A prognosis of phrenitis and death, although turning out to be incorrect, was perhaps justifiable. Immediate treatment consisted in the administration of diffusible stimulents, mild dose of physic, thorough cleansing of wounds, with extraction of all loose pieces of bone. In four hours the pulse rose to 32, temperature 100°. Constant irrigation of the whole head with hot water was then had recourse to, with experimental doses of bromide of potassium, ℥ij every four hours.

The following day, April 26th, and up to the seventh day, this course was steadily persevered in. The genera. effect seemed to be to keep the mare in a constant state of quietude. On the third day the temperature rose to 103°, but by the aid of two doses of sod. salicyl. this was at once reduced. The pulse invariably stood at 26 to 30 during these seven days. No inflammation of the brain occurred and the wound assumed a healthy suppurating character. The swelling, however, was very great. On the third day large portions of the frontal, and smaller portions of the inferior floor of the orbit were taken away. The frontal sinus was thus opened at the superior extremity, which opening admitted the entrance of three fingers. The temperature of the water used for irrigation *was gradually reduced*, until nothing but cold water was applied. After the seventh day the bromide was discontinued, and the pulse rose within thirty-six hours to 40, and temperature 100°. During the whole of the seven days the mare showed no inclination to drink anything, save about two pints a day of cold water. No gruel of any description could she be induced to drink; and of course eating was out of the question, on account of fracture of the jaw. She had administered to her, daily, from one to two pounds of finely chopped raw beef in the shape of balls. At the end of the seventh day she began slowly to take a little nourishment herself, in the form of thick oatmeal gruel, with chopped carrots; and gradually but surely she took different varieties of food, and in greater quantities. The meat balls were discontinued gradually. Cold water

irrigation, with varied dressings of acid carb., sol. arg. nit., sol. pot. permang., zinci chlorid. iodoform, effected a cure in five weeks from the date of accident. On May 12th the frontal sinus was trephined, on account of an accumulation of pus, and several bone sloughs, belonging to the superior maxillary, extracted.

The principal interest connected with this case I take to be is the beneficial action of bromide of potassium in such large doses. The injuries were so extensive that inflammation of the brain seemed almost a certainty, and to the beneficial action of pot. bromid. must the success of the case be attributed. Constant irrigation with water, gradually lowered as to temperature, had likewise, I think, a splendid effect. Another point of interest lay in the beautiful union that took place in the lower jaw.

After this practical experience, I think it may safely be stated now that a horse may easily be kept alive, and that, too, with very little trouble, on minced flesh. This mare for seven days had literally nothing but meat, and for the next week very little in addition. The details of the treatment of the wound as to surgery, syringing, etc., were such as recommended themselves from day to day, the only point of interest being the bursting of the temporal artery on the sixth day, which caused considerable danger at the time, but which was happily soon overcome. The mare has now been at regular work since June 7th.— *Veterinary Journal.*

AMERICAN VETERINARY COLLEGE HOSPITAL.

REPORTS OF CASES.

By M. Bunker, D.V.S., House Surgeon.

LACERATION OF THE RECTUM.

September 20th I was called to see a sick horse at a private stable in this city. When I got to the stable I found a bay gelding suffering apparently from spasmodic colic. The history of the case was as follows, viz.:

Monday afternoon, on his return from a drive in the park, did

not eat his supper; had done his work well and was not overdriven. About 4 a. m. Tuesday morning the coachman was awakened by hearing him pawing; came down to the stable, but as the horse did not seem to be very bad, went back to bed and did not see the horse again until six. At this time he was quite sick, being up and down; having nothing else to give him, gave some whiskey. Soon after, by direction of the owner, the coachman went in search of a man to do something for the horse. A man was found, and armed with a syringe proceeds to the stable and attempts to give an injection. The syringe was an old brass one, in the nozzle of which was a piece of leaky rubber tubing. Into this tubing was inserted a wooden tube about an inch in diameter and nine in length, terminating in a round blunt end. Several injections were given with this apparatus, which did not seem to relieve the animal any, but in fact the horse grew worse.

About 2 p. m. the coachman sent to the hospital for some one to come and see the horse, and on my arrival at the stable I found the horse, as I have previously mentioned, apparently suffering from a severe attack of spasmodic colic. On inquiry I found the horse had then been sick about ten hours, had been given injections, a dose of whiskey, and a dose of some other medicine.

The horse was in constant and excessive pain, would neither stand or lie still scarcely long enough to take the pulse, which was about 60 to 70, countenance very anxious, the respiration much accelerated, the body covered with profuse perspiration. I was in the act of inserting my hand to examine the condition of the fœces, if there were any in the rectum, when I observed a little blood flowing from the anus. The coachman told me that the horse had been bleeding like that for an hour or two.

I then inserted my hand in the rectum and found a considerable quantity of clotted and liquid blood—at least a large cupful. The horse made violent efforts to expel my hand at first, but after a short time I was enabled to examine the condition of the walls of the rectum. I found two spots where there were lacerations of the superior surface of the rectum to a considerable extent, and was well satisfied that the perforation was complete, but as

the horse was again straining, did not press my examination. A diagnosis of spasmodic colic, with laceration of the rectum from the maladministration of injections.

A very grave prognosis was given.

A six drachm dose of chloral was given, and orders to give two ounces of tincture opii. with one ounce of sul. ether in a couple of hours, if the horse did not remain quiet, were left with the coachman.

About seven o'clock I saw the horse again, and found him much quieter from the effects of the opiate, but there was still a slight discharge of blood from the anus. The administration of opium and ether through the night was directed, and the owner told that the horse would not recover.

He was seen again the next morning, when he was found almost pulseless, covered with cold perspiration, and a temperature of nearly 105°. The rectum was swollen to such an extent that the hand could not be introduced, nor was it desirable to do so. Word was left that the horse could live but a very short time, and a post mortom was requested. The animal lived about half an hour after he was seen. On being informed that he had been taken to the offal dock, I went there and made an examination.

I found on exposing the contents of the abdomen, that there was some peritonitis, with but little fluid; that the large intestine was somewhat inflamed; having removed the large intestine, the floor of the pelvis was cut through so as to expose the rectum, together with the small colon; a circular incision was made around the anus, and the rectum, together with a portion of the floating colon, was removed.

No fœces were found in either the rectum or in the small colon.

The internal surface of the rectum was intensely swollen and congested and the small colon to a lesser degree; but at the anterior extremity, at the termination of the floating colon and extending into that portion of the intestine, the rectum was completely perforated, except about an inch in the centre, and this portion was nearly torn through. The hand could be passed from the intestine to the outside with ease. The edges of the wound

were ragged, it was irregular in its direction, showing conclusively that it was done by some blunt-pointed instrument, which in this case was the wooden nozzle to the syringe.

VESICAL CALCULUS—URETHRO-LITHOTOMY.

A bay gelding, about seven years old, fourteen hands high, was brought to the hospital September 2, 1881, with the following history: The owner had noticed that the horse for the previous two or three months would make frequent and ineffectual attempts to urinate; sometimes he would pass a small quantity and with a gush, followed by a good deal of straining. The urine was said to be high colored. A diagnosis of probable calculus in the bladder was made, and if such was the case an operation was advised.

When the animal was brought to the hospital he was placed in a stall and very soon made an effort to pass his urine. He passed but a small quantity at one gush; this was collected in a vessel and found to be very dark and bloody. The animal strained considerably after passing this urine.

On rectal examination the bladder was found to be nearly empty of urine, but a hard round body could be felt in it.

The diagnosis being thus confirmed, the operation of lithotomy was advised.

On September 7, the consent of the owner having been obtained, the horse was prepared for operation. Since September 2, the horse had been kept on low diet and mucilaginous drinks in the shape of flaxseed gruel and tea. About an hour previous to the operation five drachms of chloral hydrate were given to the animal.

The animal being secured in standing position the urethra was injected with tepid water, and thus dilated, a longitudinal incision was made through the perineum about an inch in length into the urethra just above the ischial arch. As soon as the knife penetrated the urethra a small stream of water burst forth, thus serving as a guide to the operator as to the depth of his incision, and preventing injury to the parts from cutting too deeply.

A pair of small parturition forceps was used, and being introduced into the incision in the bladder, and the hand of the operator being put into the rectum, the calculus was grasped and after some little manipulation was drawn out.

The bladder was then carefully washed out with tepid water and carbolic solution and a low diet with mucilaginous drinks was prescribed, the incision to be washed two or three times daily.

September 8. Wound looks well; a little clotted blood on the inside of urethra; the urine is voided from both the incision and the penis. A simple washing with carbolized water, with a little oil rubbed on the inside of the thighs to prevent irritation from the urine. There were no signs of reacting fever, the temperature being only three-eighths of a degree above normal.

September 9. No fever, very little discharge; very little inflammation of the parts. The same treatment was followed. The horse was now given his usual allowance of oats and hay, but the flaxseed tea was kept up.

September 10. General condition the same, the wound granulating nicely and from this date until the 16th, when he was sent home, the wound was kept clean, the edge slightly cauterized with nitrate of silver pencil and slight exercise given.

On the 16th the horse was sent to his owner's residence in Elizabeth, N. J., with directions simply to keep the wound clean. The animal might have been sent home some days sooner, but the owner preferred that he should stay until all danger from complications were past.

Since he left the hospital nothing has been heard from the case, so that it is safe to say that the recovery is complete.

The calculus on examination proved to be an ordinary mulberry calculus, and weighed six drachms.

COMMINUTED FRACTURE OF THE PELVIS.

To answer a call left at the Hospital to attend a horse that had had a fall and was unable to get up, I went to a stable in West Eighteenth street, in New York, and found a bay mare with the following history: When the stableman went to back the

animal out of the stall, which is some six inches above the floor, she made a misstep and knuckled over on her nigh hind foot; then in her attempt to regain her feet she slipped, and then in trying it again she slipped a third time, spreading her legs apart, and was unable to get up. She was dragged into her stall, where she soon became covered with a profuse perspiration and was in much pain.

When she was seen she was suffering intensely, and on manipulation of the near hind leg an excess of motion was found at the superior extremity of the thigh, but owing to the mass of muscles crepitation was imperfectly detected. A diagnosis of fracture of the superior part of the leg was made, and the animal ordered destroyed. She died, however, before it was done. Post mortem examination revealed a comminuted fracture of the pelvis in the left side. The neck of the ilium was transversely fractured, the external border of the obturatur foramen broken off, the cotyloid cavity shattered into pieces of various sizes, and in fact there was a complete smash of all the pelvic bones.

The examination also revealed that both the articular head of the femur and the surface of the acetabulum were affected with extensive ulcerations, the articular cartilage on both being destroyed in three different places. Will not this diseased condition of the bones explain, or at least furnish a practical explanation for such a complete shattering of the bone, and especially when occuring in such a young animal, the mare being only seven?

CARTILAGINOUS QUITTOR—REMOVAL OF THE LATERAL CARTILAGE.

In reporting this case for the REVIEW I do so not because it is an unusual case to come under the veterinary surgeon's care. In fact it is a complication very often met with in city practice, and is not generally looked upon as being very desirable to have in charge, but because I wish to place before the readers of the REVIEW the description of an operation which is not generally performed by the American practitioner and in fact is comparatively seldom if ever performed by English practitioners in the United States. Another point to which I wish to call attention, is the brief

period intervening from his admission to the hospital to when he was sent home to resume work.

September 9. A sorrel gelding belonging to a physician of this city, was brought to the hospital for treatment. The horse had for over six months a cartilaginous quittor on the near front foot, on the inside quarter, which was very much swollen and enlarged. Upon the surface of this swelling and above the coronary band were two fistulous openings, into which the probe could be introduced to various depths. These tracks were connected with each other, as injections into one would return through the other.

The only treatment deemed advisable in this case was the removal of the diseased cartilage; and the consent of the owner having been obtained, the horse was prepared for operation by having the diseased foot placed in water for a day or two, so as to soften the hoof.

This having been done the inside quarter was pared down so as to facilitate the operation.

The horse was thrown on his left side, the near fore foot taken from the hobble and secured upon the outside of the off metatarsal region.

A knife was then inserted beneath the coronary band, and care being taken to preserve this, a free incision was made. The portion of skin covering the diseased cartilage was then freed from its attachment. The cartilage was then removed with the left sage knife, care being taken that every particle of that structure was removed.

There is one danger in this simple operation, which must be kept in mind, and that is the danger of injuring the articulation.

The cavity left by the removal of the cartilage was dressed with oakum saturated with carbolic solution and secured by a band on the outside. The horse on being allowed to rise showed very little lameness and stood on his feet with but little pain.

September 14 was the day the operation was performed, and the dressing was allowed to remain on until the 17th, as the animal did not show lameness or pain.

September 17. Wound looks healthy. One or two little pieces of tissue removed. Same dressing.

September 19. Wound looks well. Same dressing. The wound was dressed every other day until September 27, when the shoe, which had been removed, was replaced by a plain shoe, with the inside quarter a little shorter than the outside.

The wound has filled up gradually with even healthy granulations, and any tendency to the formation of false quarter is checked by paring the secreted horn.

The animal is dressed as before, and on October 17 is shod with a bar shoe, the inside quarter pared off, so as to relieve the pressure. The wound has entirely closed up and presents now only a granulating surface half the size of a silver five cent piece.

October 19. The horse is sent home with a simple bandage on the foot, with directions to the doctor to put him at slow work and send him to be dressed in a week.

October 22. Animal brought back to be dressed. Is not lame, and wound entirely healed. The horse resumes his work after 35 days.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The regular monthly meeting of the New York State Veterinary Society was held at the American Veterinary College Tuesday evening, Oct. 11th, 1881, with President Dr. Burden in the chair.

The minutes of the previous meeting were read and adopted

Dr. W. J. Coates read a paper on the pathology, causes, symptoms and differential diagnosis of acute catarrhal bronchitis, on which quite a lively discussion ensued, especially in regard to the use of percussion and auscultation, as to which was the better in detecting atelectasis of the lungs from localized pneumonia as a complication, also on the value of the thermometer when the physical signs give negative results; then a discussion arose as to whether it was proper to apply the term expectoration to the discharges which were expelled from the air passages, and if there is ever a discharge into the mouth from larynx in inflammations. A vote

of thanks was extended to the essayist for his contribution to the interest of the meeting.

M. Bunker, D.V.S., was admitted a member, and the names of F. H. Parson, D.V.S., and R. H. Harrison, D.V.S., was proposed for membership. In absence of the committee of membership on W. T. Carmody, M.R.C.V.S., the name was laid on the table until next meeting.

A communication was read from J. M. Heard, M.R.C.V.S, tendering his resignation as a member, on account of his inability to attend the meetings, with his best wishes for the success of the society. His name was balloted on and resignation accepted.

It was moved and seconded that a synopsis of the minutes of the meetings be hereafter sent to the editor of the AMERICAN VETERINARY REVIEW for publication. Carried.

The President appointed Dr. R. A. McLean to read a paper at the next meeting, he to notify the Secretary of the subject.

W. J. COATES, *Secretary.*

MONTREAL VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this Association was held in the lecture room of the Veterinary College, Union avenue, on Thursday evening last, Mr. C. J. Alloway, V.S., President, in the chair. As this was the first meeting of the season, the retiring President delivered an address reviewing the work of last winter. The financial statement was read, showing a balance in favor of the Association. The Librarian's report showed about 400 volumes in the library, all the latest works having been added. The election of officers for the ensuing winter was then held, with the following result: President, Jas. Bell, M.D.; 1st Vice-President, M. C. Baker, V.S.; 2d Vice-President, Wm. McEachran, M.D., V.S.; Secretary-Treasurer, Mr. Fred. Torrance; Librarian, Mr. J. A. Chandler.

The following gentlemen were proposed as members of the Association: Henry C. Kingman, W. P. Robbins, J. E. Gardner, W. H. Clock, E. P. Ball, George Remucks and J. A. Bishop.

At the next meeting Dr. Osler will deliver an account of his

recent visit to the British National Veterinary Congress, as a representative of this Association, and Principal McEachan will read a paper on the disease which has prevailed among cattle in the county of Pictou, Nova Scotia, for the last thirty years, and which is now under investigation.

NOTICE.

HILL'S BOVINE PATHOLOGY AND SURGERY.

The publication of Prof. Hill's new work, "Bovine Pathology and Surgery," has been somewhat delayed by a difficulty about the colored plates which will illustrate the work; but the difficulty has been overcome, and the book will soon be ready.

Mr. Fleming is actively engaged upon his new work, and between two and three hundred illustrations are already prepared for the text.

CORRESPONDENCE.

HARTFORD, CONN., October 18, 1881.

Editor American Veterinary Review:

In the last number of the REVIEW I noticed reports of cases in which the trocar and canula were used for relief of tympanitis occurring in the horse.

To the best of my knowledge this operation has been done very rarely except by the French. While in England I saw the operation done once only, and Williams, in his Surgery, contents himself with writing in regard to it that it may be of use in some cases, but that it has not been so in his hands in any case.

In this country it is not, I think, generally regarded as a safe operation.

I have performed the operation once only, and with relief so marked and immediate that I must have the evidence of other cases before deciding finally that to the operation alone was due the very satisfactory result witnessed.

The history of my case is not of interest, as the case presented nothing unusual to a case of severe tympanitic colic. I saw the case late and operated at once.

I cannot but think that, in cases where the tympany is extreme, this operation is a most valuable remedy, and it seems to me that inquiry into its merits would result in its general use.

Will the editor kindly give the teaching of the American Veterinary College regarding this matter.

F. E. RICE.

[The operation of puncture of the cœcum in cases of tympanitis is one which is recommended in the treatment of this disease by, we believe, every veterinary member of the faculty of the American Veterinary College. From the statistics obtained from the book of Records of Clinics and Hospital Patients, about 83 cases of flatulent colics have been punctured; all have been relieved; none have died; two presented some little complication such as abscess and fistula, on the place of puncture. We place a great deal of confidence in the operation, and, though we would not consider all cases as of necessity to be operated upon, we believe that many animals owe their lives and saving of much suffering to this timely and judicious surgical interference.—ED.]

OBITUARY.

DR. C. H. HERTWIG.

The Veterinary School of Berlin has recently lost one of its old professors; and scarcely is the grave of Director Hering closed than the veterinary profession has to regret the loss of another veteran from among its members.

Dr. C. H. Hertwig died in July last, after having filled the professorship at the Berlin school for more than fifty years. German veterinary literature is rich in numerous works due to his pen.

NEWS AND SUNDRIES.

VACCINATION IN CHINA.—In China persons are vaccinated on the nose, and not on the leg or arm, as in other countries.

CATTLE SUPPLY.—The cattle supply of southwest Texas is nearly exhausted, and the northern markets must look elsewhere for beeves.—*Farm Journal.*

CANADIAN EXPORTATION.—Since the first of January there have been shipped from Montreal 37,612 live cattle and 53,322 live sheep.—*American Cultivator.*

AMERICAN HOGS.—The hog products of last year in the United States aggregated 33,000,000, of which number 7,000,000 were handled at the Union Stock Yards, Chicago.—*Prairie Farmer.*

SHEEP IN GREAT BRITAIN.—Sheep farming in Great Britain is declining, the number of sheep in England and Scotland having fallen off over 12 per cent. during the last two years.—*Massachusetts Ploughman.*

ANTHRAX IN NEBRASKA.—It is reported that anthrax has broken out among the cattle near Lincoln, Neb. Vaccination is being tried as a preventive of the spread of the disease.—*Country Gentleman.*

TEXAS FEVER IN IOWA.—Messrs. Kimball & Barns, Lamoille, Iowa, write us that Texas fever has broken out near that place, communicated by a lot of Texas cattle that were herded there. The mortality had been considerable up to latest accounts.—*Nat. Live Stock Journal.*

PLEURO-PNEUMONIA IN MARYLAND.—We regret to learn of the appearance in some quarters of the State of this fatal disease among cattle. The law enacted for its extinction has been carried out in such a manner as to be of little or no effect.—*American Farmer.*

A LARGE COW.—Probably the largest cow in the world is owned by Martin C. Stokes of Grayville, White Co., Ill. She is seven years old and weighs 3,000 pounds; 17½ hands high, 10½ feet long from end of the nose to the buttock, 17½ from the nose

to the end of the tail, 8 feet 9 inches around the girth, 26 inches around the forearm, and 31 inches across the hips.—*American Cultivator.*

THE TYPHOID FEVER GERM.—Klebs, of Prague, reports that a certain microscopic object has been discovered by him infesting the mucous membrane of intestines of typhoid patients. It does not occur in that situation in any other disease, so far as known. *Proceedings of Kings County Medical Society.*

PLEURO-PNEUMONIA AGAIN.—Contagious pleuro-pneumonia has again obtained a foothold in Montgomery Co., Penn. In Jos. S. Andrew's herd of nineteen head two have been killed and two are sick at present. It is thought to have its origin from cattle coming from Maryland. The State authorities have the premises in charge.

NO TRACE OF PLEURO-PNEUMONIA IN THE WEST.—The most rigid examination set on foot by the Treasury Cattle Commission, at the great western centres of the trade, have so far failed to disclose the presence of any trace of pleuro-pneumonia, and have only confirmed the members of the Commission in the opinion that this disease has not crossed the Alleghanies. The investigation will be continued, however, in a quiet and unostentatious way, for some months to come, for the Commission have fully determined to take nothing for granted in a matter of such vital importance.—*National Live Stock Journal.*

EXCHANGES, ETC., RECEIVED

FOREIGN.—Veterinarian, Veterinary Journal, Clinica Veterinaria, Revue fur Thierheilkunde und Thierzucht, Archives Veterinaires, Revue d'Hygiene, Recueil de Medecine Veterinaire, Gazette Medicale, Presse Veterinaire, Annales de Belgique, Journal Dosimetrique, Journal de Zoötechnie.

HOME.—Country Gentlemen, American Cultivator, Medical Review, Medical and Surgical Reporter, Turf, Field and Farm, American Agriculturist, Prairie Farmer, Ohio Farmer, National Live Stock Journal, Bulletins of the National Board of Health, Medical Record.

JOURNALS.—Journal of Materia Medica, Home Farmer, Minnesota Farmer, Iowa Farmer, Journal of Agriculture, (Montreal) Rochester Herald, &c.

PAMPLETS.—Traitment Dosimetrique de la Diphtherié, Veterinair Kalender, von Alois Koch.

CORRESPONDENCE.—J. C. Myers, Jr., A. A. Holcombe, R. D. Eaton, M. Bunker, C. B. Michener, F. E. Rice, J. D. Hopkins.